

WHAT IS CLAIMED IS:

1. A method of reproducing information from a recording medium having first and second places on which first and second information signals are recorded respectively, the recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps of:
 - rotating the recording medium;
 - enabling a head to reproduce the first and second information signals from the first and second places in the recording medium on a time sharing basis to get first and second reproduced signals respectively;
 - temporarily storing the first and second reproduced signals in a buffer memory;
 - outputting the first and second reproduced signals from the buffer memory at first and second transfer rates respectively;
 - transmitting the first and second reproduced signals from the head to the buffer memory on a time sharing basis and at a third transfer rate higher than the first and second transfer rates; and
 - deciding at least one of (1) an information amount of the first reproduced signal continuously transmitted from the head to the buffer memory and (2) an information amount of the second reproduced signal continuously transmitted from the head to the buffer memory on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the first place to the second place as viewed on one of the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second

signal recording layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.

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2. A method of recording information on a recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps of:

rotating the recording medium;

10 storing first and second information signals into a buffer memory at first and second transfer rates respectively;

reading out the first and second information signals from the buffer memory on a time sharing basis to get first and second read-out signals respectively;

15 enabling a head to record the first and second read-out signals on first and second places in the recording medium respectively on a time sharing basis and at a third transfer rate higher than the first and second transfer rates; and

deciding at least one of (1) an information amount of the first
20 read-out signal continuously transmitted from the buffer memory to the head and (2) an information amount of the second read-out signal continuously transmitted from the buffer memory to the head on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the first place to the second place as viewed on one of
25 the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second

signal recording layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.

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3. A method of recording and reproducing information on and from a recording medium having a first place on which a first information signal is recorded, the recording medium including at least first and second signal recording layers accessible from one side, the method comprising the steps

10 of:

rotating the recording medium;

enabling a head to reproduce the first information signal from the first place in the recording medium to get a reproduced signal;

temporarily storing the reproduced signal in a buffer memory;

15 outputting the reproduced signal from the buffer memory at a first transfer rate;

storing a second information signal into the buffer memory at a second transfer rate;

transmitting the reproduced signal from the head to the buffer
20 memory at a third transfer rate higher than the first and second transfer rates;

reading out the second information signal from the buffer memory to get a read-out signal;

enabling the head to record the read-out signal on a second place in
25 the recording medium which differs from the first place at the third transfer rate and on a time sharing basis with respect to the reproduction of the first information signal from the first place; and

deciding at least one of (1) an information amount of the reproduced

signal continuously transmitted from the head to the buffer memory and (2) an information amount of the read-out signal continuously transmitted from the buffer memory to the head on the basis of a given relation among parameters including (a) a time interval taken by the head to move from the
5 first place to the second place as viewed on one of the first and second signal recording layers, (b) a time interval taken by the head to move from the second place to the first place as viewed on one of the first and second signal recording layers, (c) a time interval taken by the head to move its focus from the first signal recording layer to the second signal recording
10 layer, (d) a time interval taken by the head to move its focus from the second signal recording layer to the first signal recording layer, (e) the first transfer rate, (f) the second transfer rate, and (g) the third transfer rate.